

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

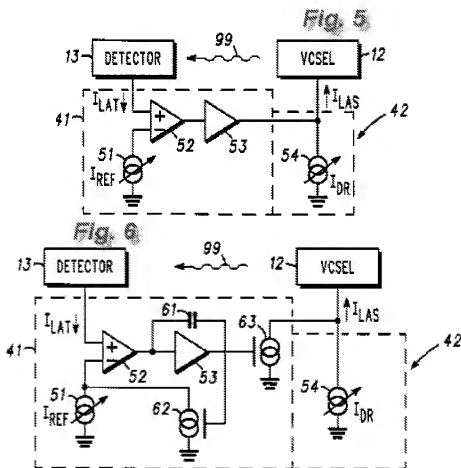
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 7 and 9 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kiely (6,151,344).

**Regarding claim 1**, Kiely shown Figures 5 and 6, discloses a method of automatically controlling an output power of a laser diode (see Figs. 5 and 6, Character 12, the reference call “VCSEL”), the method comprising: generating an error voltage between an output voltage of the laser diode sampled during an automatic power control period (see Figs. 5 and 6, Character 13) and a reference voltage (see Figs. 5 and 6, Character 52); proportional integral control (see Fig. 6 Characters 53 and 61, Column 6, Lines 39 –42) and the error voltage to generate a compensated control voltage (it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from

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a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ F.2d 1647 (1987)) and applying the compensated control voltage to the laser diode (see Fig. 5 and 6, Character 12, the reference call "VCSEL"), wherein the compensated control voltage applied to the laser diode (see Fig. 5 and 6, Character 12, the reference call "VCSEL") is an effective control voltage (see Fig. 6, Character 62) within a predetermined range (see Column 4, Lines 59 – 67 and Column 5, Lines 1 – 36).



**Regarding claim 7**, Kiely shown Figures 5 and 6, discloses a computer readable medium having embodied thereon a computer program for automatically controlling an output power of a laser diode comprising: generating an error voltage between an output voltage of the laser diode (see Figs. 5 and 6, Character 12, the reference call "VCSEL") sampled during an automatic power control period (see Figs. 5 and 6, Character 13) and a reference voltage (see Figs. 5 and 6, Character 52); proportional integral control (see Fig. 6 Characters 53 and 61, Column 6, Lines 39 –42) and the error voltage to generate a compensated control voltage (it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ F.2d 1647 (1987)) and applying the compensated control voltage to the laser diode (see Fig. 5 and 6, Character 12, the reference call "VCSEL"), wherein the compensated control voltage applied to the laser diode (see Fig. 5 and 6, Character 12, the reference call "VCSEL") is an effective control voltage (see Fig. 1, Character 62) within a predetermined range (see Column 4, Lines 59 – 67 and Column 5, Lines 1 – 36).

**Regarding claim 9**, Kiely shown Figures 5 and 6, discloses an apparatus to automatically control an output power of a laser diode, the apparatus comprising: an error voltage generation unit generating an error voltage between an output voltage of the laser diode (see Figs. 5 and 6, Character 12, the reference call "VCSEL") sampled

during an automatic power control period (see Figs. 5 and 6, Character 13) and a reference voltage (see Figs. 5 and 6, Character 52); and a control voltage generation unit performing proportional integral control (see Fig. 6 Characters 53 and 61, Column 6, Lines 39 –42) and the error voltage to generate a compensated control voltage (see Column 4, Lines 59 – 67 and Column 5, Lines 1 – 36, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ F.2d 1647 (1987)) and applying the compensated control voltage to the laser diode (see Fig. 5 and 6, Character 12, the reference call “VCSEL”).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiely et al (6,151,344) in view of Woodley (2003/0179787 A1).,

***Regarding claims 4, 8 and 10*** Kiely shown Figures 5 and 6, discloses a method

of automatically controlling an output power of a laser diode (see Figs. 5 and 6, Character 12, the reference call "VCSEL"), the method comprising: generating an error voltage between an output voltage of the laser diode sampled during an automatic power control period (see Figs. 5 and 6, Character 13) and a reference voltage (see Figs. 1, Character 52); proportional integral control (see Fig. 6 Characters 53 and 61, Column 6, Lines 39 –42) and the error voltage to generate a compensated control voltage within a predetermined range (see Column 4, Lines 59 – 67 and Column 5, Lines 1 – 36, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex Parte Masham*, 2 USPQ F.2d 1647 (1987)) within a predetermined range and applying the compensated control voltage to the laser diode (see Fig. 5 and 6, Character 12, the reference call "VCSEL").

Kiely discloses the claimed invention except for analog to digital converter and digital to analog converter. Woodley teaches providing his device with an analog to digital converter and digital to analog converter. However, it is well known in the art to apply the analog to digital converter and digital to analog converter as disclosed by Woodley in (see Fig. 3). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was to apply the well known analog to digital converter and digital to analog converter as suggested by Woodley to the laser of Kiely, because could be use the ADC to convert the laser beam to digital signal to

the processor can process the information and could be use the DAC to convert the digital signal to the analog signal to can make a feedback in this device to see (see Fig. 3) of Woodley.

### ***Allowable Subject Matter***

Claims 5, 6, 11 – 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 18 – 34 are allowed.

### ***Response to Arguments***

Applicant's arguments filed November 08, 2007 have been fully considered but they are not persuasive. Applicant argues the prior art lacks: on pages 10 – 11, the applicant said; Kiely does not teach or suggest utilizing an output voltage which is an effective output voltage within a predetermined range to generate an error voltage. The examiner disagree with the applicant arguments since the prior art does teach output voltage which is an effective output voltage within a predetermined range to generate an error voltage, because the consideration is include in the gain amplifier factor which is consider a predetermined range in this limits expected to be seen in operation under

normal or worst case conditions (see Column 4, Lines 59 – 67 and Column 5, Lines 1 – 36) as stated in the rejection above.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Fordé whose telephone number is (571) 272-1940. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Sun Harvey can be reached on (571) -272-1835. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Delma R. Fordé/  
Examiner, Art Unit 2828

/Minsun Harvey/  
Supervisory Patent Examiner, Art Unit 2828